

CLAIMS

What we claim:

1. A modular-type home gateway system comprising:

a HomePNA (Home Phoneline Network Alliance) controller connected to a home telephone line, for providing a home network interface;

an ADSL (Asymmetric Digital Subscriber Line) controller connected to a outdoor telephone line, for providing an access network interface; and

a system controller for controlling the HomePNA controller and the ADSL controller,

wherein the HomePNA controller and the ADSL controller are modular type controllers detachably connected to the system controller through a predetermined interface, and provides a bridge function between a home network and an access network.

2. The modular-type home gateway system according to claim 1, wherein the predetermined interface is a PCMCIA (Personal Computer Memory Card International Association) interface.

3. The modular-type home gateway system according to claim 2, wherein the system controller includes:

a CPU controlling the ADSL controller, the HomePNA controller and a PCMCIA interface unit, and performing a bridge function for achieving a wide-band service data transmission between the ADSL controller and the HomePNA controller;

a flash ROM for storing a program therein;

a synchronous DRAM for storing a plurality of data related to a program execution of the CPU;

a non-volatile SRAM for storing a profile information of information terminals connected to the home network;

a clock generator for generating a system clock, and transmitting the system clock to the CPU; and

a system reset part for generating an associated reset signal for operating the CPU, and transmitting it to the CPU.

4. The modular-type home gateway system according to claim 3, being characterized in that the PCMCIA interface unit includes:

a PCMCIA slot A interface unit for an interface function between the ADSL controller and the system controller; and

a PCMCIA slot B interface unit for an interface function between the HomePNA controller and the system controller,

wherein each of the PCMCIA slot A interface unit and the PCMCIA slot B interface unit includes:

an address latch part for controlling an address signal between the system controller and a PCMCIA slot;

a data buffer for converting a PCMCIA slot data to a CPU data according to a state of a PCMCIA slot card enabling signal received from the system controller, and transmitting the PCMCIA slot data to the system controller;

a control signal buffer for converting a CPU control signal to a PCMCIA slot control signal according to a state of a PCMCIA slot card enabling signal received from the system controller; and

a state signal buffer for converting a PCMCIA slot state signal to a CPU state signal according to a state of a PCMCIA slot card enabling signal generated from the system controller, and transmitting it to the system controller.

5. The modular-type home gateway system according to claim 3, wherein the CPU receives a program from the flash ROM by using a flash ROM control signal and a CPU data, or stores the program in the flash ROM; receives an access network wide-band service data from a PCMCIA slot A interface unit of the PCMCIA interface unit, stores the access

network wide-band service data in the synchronous DRAM by using a synchronous DRAM control signal and a CPU data, reads either a signal or data related to a driving of the system controller from the synchronous DRAM, and transmits the related signal or data to a PCMCIA slot B interface unit of the PCMCIA interface unit.

6. The modular-type home gateway system according to claim 5, wherein the CPU receives a home network wide-band service data from the PCMCIA slot B interface unit, stores the home network wide-band service data in the synchronous DRAM by using a synchronous DRAM control signal and a CPU data, reads either a signal or data related to a driving of the system controller from the synchronous DRAM, and transmits the related signal or data to the PCMCIA slot A interface unit.

7. The modular-type home gateway system according to claim 6, wherein the CPU receives a profile information of information terminals connected to a home network from the non-volatile SRAM by using a non-volatile SRAM control signal and a CPU data, and stores the profile information of the information terminals in the non-volatile SRAM.

8. The modular-type home gateway system according to claim 4, wherein the ADSL controller includes:

an ADSL modulation/demodulation controller for processing a data switching between a PCMCIA slot A interface unit and an ADSL AFE (Analog Front End) controller, and transmitting a resultant signal to a PCMCIA slot A interface unit; and

an ADSL AFE controller for interchanging an ADSL transmitting/receiving signal with the access network through an outdoor telephone line after completing the data switching with the ADSL modulation/demodulation controller, and transmitting a resultant signal to the ADSL modulation/demodulation controller.

9. The modular-type home gateway system according to claim 4, wherein the HomePNA controller includes:

a MAC (Medium Access Control) controller processing a PCMCIA-associated signal or data received from a PCMCIA slot B interface unit according to a predetermined rule, transmitting a resultant signal to a HomePNA modulation/ demodulation controller, performing a signal processing according to a predetermined control signal received from the HomePNA modulation/demodulation controller, and thereby transmitting the PCMCIA-associated signal or data to either the PCMCIA slot B interface unit or the HomePNA modulation/demodulation controller;

a HomePNA modulation/demodulation controller performing a predetermined data modulation/demodulation function, and transmitting each resultant signal to either a HomePNA AFE (Analog Front End) controller or the MAC controller; and

a HomePNA AFE controller converting a digital signal received from the HomePNA modulation/demodulation controller to an analog signal and then transmitting a HomePNA transmission signal to a home network, and converting a HomePNA signal received from the home network to a digital signal and then transmitting the digital signal to the HomePNA modulation/demodulation controller.